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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,093	04/12/2001	Paul M. Crivelli	10006533-1	2770

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EXAMINER

HUFFMAN, JULIAN D

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 02/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/834,093

Applicant(s)

CRIVELLI ET AL.

Examiner

Julian D. Huffman

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10, 16-17 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, there is insufficient antecedent basis for the phrase "the temperature operating range".

In claims 16 and 20, the phrase "of claim" is repeated in line 1.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishinaga et al. (U.S. 5,175,565).

Art Unit: 2853

Ishinaga et al. discloses a method for printing images on a print media from a printing system having heating elements located on a substrate, the method comprising:

receiving a temperature of the substrate before printing begins;

comparing the temperature with a set point for printing;

initiating the heating elements if the temperature is below a predetermined printing threshold;

turning off the heating elements when the threshold temperature of the substrate has been reached (fig. 39);

maintaining a mean temperature of the substrate at a temperature that is within a predefined range of an optimal temperature for the production of a droplet of ink (fig. 35, column 28, lines 10-13); and

controlling temperatures of specific sections of the substrate and a baseline temperature of ink ejection nozzles associated with the respective sections (column 25, lines 1-15).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2853

6. Claims 1-9 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishinaga et al. in view of Kawanabe et al. (U.S. 6,219,153) and Winzer et al. (U.S. 5,629,578).

Ishinaga et al. discloses a printing system receiving input data for printing images on print media comprising:

an inkjet printhead having a body (fig. 17, element 110) and ink ejection devices (fig. 1a, region 3) located on a monolithic substrate (fig. 1a/fig. 17 element 102);

a nozzle member attached to the body (fig. 17, element 103);

a controller (element 11) that optimizes the temperature operating range for printing (column 7, lines 21-24 and column 28, lines 29-36);

wherein the controller is one of an integrated circuit processor, a printer driver or firmware and further wherein the controller controls an increase in the mean temperature of the substrate through a feedback loop and turns on and off heating elements (fig. 1, element 8) to control the temperature of the substrate (fig. 35, columns 27-28, column 28, lines 10-13);

wherein the feedback loop activates heating elements associated with the ink ejection elements and increases the baseline temperature of the substrate before printing, decreases the temperature differential between the baseline temperature and the mean temperature of the substrate (fig. 39, column 28, line 57-column 29, line 68);  
and

Art Unit: 2853

wherein the controller controls temperatures of specific sections of the substrate and a baseline temperature of ink ejection nozzles of the nozzle member associated with the respective sections (column 25, lines 1-15); and

wherein the controller receives temperature data from a digital temperature sensor (column 8, lines 59-61).

Ishinaga et al. does not expressly disclose the use of pigment ink, or optimizing the temperature operating range based on the input data.

However, Kawanabe et al. discloses printing with pigment ink and further provides a method for optimizing a temperature operating range depending on the input data and the type of ink used (column 13, lines 4-15, column 21, lines 25-45, column 53, lines 1-4, 13-15 and 59-64 and column 85, lines 35-44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Kawanabe et al. into the invention of Ishinaga et al. to obtain the invention claimed for the purpose of selecting the recording method in accordance with the print data to enhance image quality and selecting the temperature operating range based on the selected recording method to optimize the temperature control.

Ishinaga et al. in view of Kawanabe et al. do not expressly disclose providing the temperature control means on the printhead.

However, Winzer et al. discloses that by providing control means in close proximity to the device it controls, signal to noise ratio is minimized (column 5, lines 53-58).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Winzer et al. into the invention of Ishinaga et al. in view of Kawanabe et al. to obtain the invention claimed for the purpose of reducing the signal to noise ratio.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishinaga et al. in view of Kawanabe et al. and Winzer et al. as applied to claim 8 above, and further in view of Kato et al. (U.S. 6,135,656).

Ishinaga et al. in view of Kawanabe et al. and Winzer et al. do not expressly disclose heating black pigment ink to 40 degrees Celsius and color pigmented ink to 45 degrees Celsius.

However, Kato et al. discloses that ink should be temperature adjusted in a range of 30-70 degrees Celsius (column 18, lines 22-25).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Kato et al. into the invention of Ishinaga et al. in view of Kawanabe et al. and Winzer et al. to obtain the invention claimed for the purpose of maintaining the viscosity of the ink at a value that provides stable ejection.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (703)

Art Unit: 2853

308-6556. The examiner can normally be reached on Monday through Friday from 9:30 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow, can be reached on (703) 308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JH

February 14, 2002



John Barlow  
Supervisory Patent Examiner  
Technology Center 2800